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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of

JEROME L. ELKIND ET AL.

Serial No. 10/695,449 (TI-29069.1)

Filed October 27, 2003

For: SYSTEM FOR DIRECTED MOLECULAR INTERACTION
IN SURFACE PLASMON RESONANCE ANALYSIS

Art Unit 2881

Examiner David A. Vanore

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Jay M. Cantor, Reg. No. 19,906

BRIEF ON APPEAL

REAL PARTY IN INTEREST

The real party in interest is Texas Instruments Incorporated, a Delaware corporation with offices at 7839 Churchill Way, Dallas, Texas 75251.

RELATED APPEALS AND INTERFERENCES

There is a related appeal pending in Serial No. 09/823,715, the parent of the subject application.

STATUS OF CLAIMS

This is an appeal of claims 1 to 7, all of the rejected claims. No claim have been allowed. Please charge any costs to Deposit Account No. 20-0668.

STATUS OF AMENDMENTS

An amendment was not filed after final rejection.

SUMMARY OF INVENTION

The invention relates to a flow cell for directed molecular interaction in conjunction with analyte assays. The flow cell includes a fluid path (104) having one or more fluidic conduits, an analyte detection chamber (102) disposed along the fluid path having at least one interior surface adapted for derivatization and a directed molecular interaction bias generator (electrodes 118, 120) in fluidic communication with the analyte detection chamber for generating a bias across the chamber sufficient to move a desired analyte into a region proximate to the interior surface adapted for derivatization. As stated at page 21, lines 18ff, "[t]he surface plasmon layer may be derivatized in a number of ways for binding selective ligands to a metal layer. The derivatization process may be a single step or several step process in which a first organic layer is deposited followed by binding (e.g., convalently) of selected ligands depending on the desired analyte to be detected". According to "THESAURUSDICTIONARY.com", the term "derivatize" is defined as --to alter the chemical composition [of a compound] by a chemical reaction which changes some part of the molecule, leaving most of the molecule unchanged--. Covalent bonding is a chemical reaction. The interior surface adapted for derivatization is preferably a surface plasmon resonance detector and preferably a surface plasmon resonance layer in optic communication with an integrally formed surface plasmon resonance sensor. The bias generator is preferably electrical or magnetic. The flow cell can further include a thermistor in fluidic communication with the analyte detection chamber.

ISSUES

The issues on appeal are as follows:

1. Whether claims 1 to 4 and 6 are anticipated by Leland et al (U.S. 6,325,973) under 35 U.S.C. 102(b).

2. Whether claims 5 and7 are patentable over Leland et al. (U.S. 6,325,973) in view of Gorgone et al. (U.S. 3,646,313) under 35 U.S.C. 103(a).

GROUPING OF CLAIMS

The claims stand or fall together for reasons as set forth hereinbelow under ARGUMENT.

ARGUMENT

ISSUE 1

Claims 1 to 4 and 6 were rejected as being anticipated by Leland et al. under 35 U.S.C. 102(b). The rejection is without merit.

Claim 1 requires, among other features, a fluid path having one or more fluidic conduits and an analyte detection chamber disposed along the fluid path having at least one interior surface adapted for derivatization. No such feature is taught or suggested by Leland et al. either alone or in the combination as claimed. While the Examiner has referred to Fig. 23 of Leland et al. to allegedly show this feature in conjunction with the specified portions of the specification, no such feature can be found in the cited subject matter. There is no mention of derivatization. A discussion of this term is set forth in great detail above under SUMMARY OF INVENTION.. As shown above, the term "derivatize" is defined as –to alter the chemical composition [of a compound] by a

chemical reaction which changes some part of the molecule, leaving most of the molecule unchanged--. No such feature is taught or suggested by Leland et al. In fact, referring to the section of Leland et al. to which the examiner refers (column 8, lines 28 to 41), there is a magnetic attraction of the particles and not a "derivatization" as claimed.

As stated at page 5, line 8ff, "[t]he present invention provides ion capture assays, wihich involve a first specific binding molecule conjugated to a solid phase material of opposite charge containing a second specific binding member". As further stated at page 8, line 3ff, "the antibody may be conjugated to a large negatively charged polystyrene bead, having a filed applied to bring it to the surface. Alternatively, the antibody may be conjugated to a large negatively charged polymer".

Claim 1 further requires a directed molecular interaction bias generator in fluidic communication with the analyte detection chamber for generating a bias across the chamber sufficient to move a desired analyte into a region proximate to the interior surface adapted for derivatization. No such feature is taught or suggested by Leland et al. either alone or in the combination as claimed since there is no derivatization in Leland et al.

Claims 2 to 4 and 6 depend from claim 1 and therefore define patentably over Leland et al. for at least the reasons presented above with reference to claim1.

In addition, claim 2 further limits claim 1 by requiring that the interior surface adapted for derivatization be a surface plasmon resonance detector. No such combination is taught or suggested by Leland et al.

Claim 3 further limits claim 2 by requiring that the surface adapted for derivatization be a surface plasmon resonance layer in optic communication with an

integrally formed surface plasmon resonance sensor. No such combination is taught or suggested by Leland et al.

Claim 4 further limits claim 3 by requiring that the bias generator be electrical. No such combination is taught or suggested by Leland et al.

Claim 6 further limits claim 2 by requiring that the bias generator is magnetic. No such combination is taught or suggested by Leland et al.

ISSUE 2

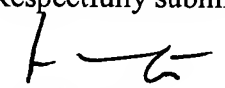
Claims 5 and 7 were rejected as being unpatentable over Leland et al. (U.S. 6,325,973) in view of Gorgone et al. (U.S. 3,646,313) under 35 U.S.C. 103(a). The rejection is without merit.

Claims 5 and 7 depend from claim 1 and therefore define patentably over the applied references for at least the reasons presented above with reference to claim 1 since Gorgone et al. fails to overcome the deficiencies in Leland et al. as demonstrated above.

CONCLUSIONS

For the reasons stated above, reversal of the final rejection and allowance of the claims on appeal is requested that justice be done in the premises.

Respectfully submitted,



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APPENDIX

The claims on appeal read as follows:

1. A flow cell for directed molecular interaction in conjunction with analyte assays comprising:

a fluid path having one or more fluidic conduits;

an analyte detection chamber disposed along the fluid path having at least one interior surface adapted for derivatization; and

a directed molecular interaction bias generator, in fluidic communication with the analyte detection chamber for generating a bias across the chamber sufficient to move a desired analyte into a region proximate to the interior surface adapted for derivatization.

2. The flow cell of claim 1 wherein the interior surface adapted for derivatization is a surface plasmon resonance detector.

3. The flow cell of claim 2 wherein the surface adapted for derivatization is a surface plasmon resonance layer in optic communication with an integrally formed surface plasmon resonance sensor.

4. The flow cell of claim 3 wherein the bias generator is electrical.

5. The flow cell of claim 4 further comprising a thermistor in fluidic communication with the analyte detection chamber.

6. The flow cell of claim 2 wherein the bias generator is magnetic.

7. The flow cell of claim 6 further comprising a thermistor in fluidic communication with the analyte detection chamber.